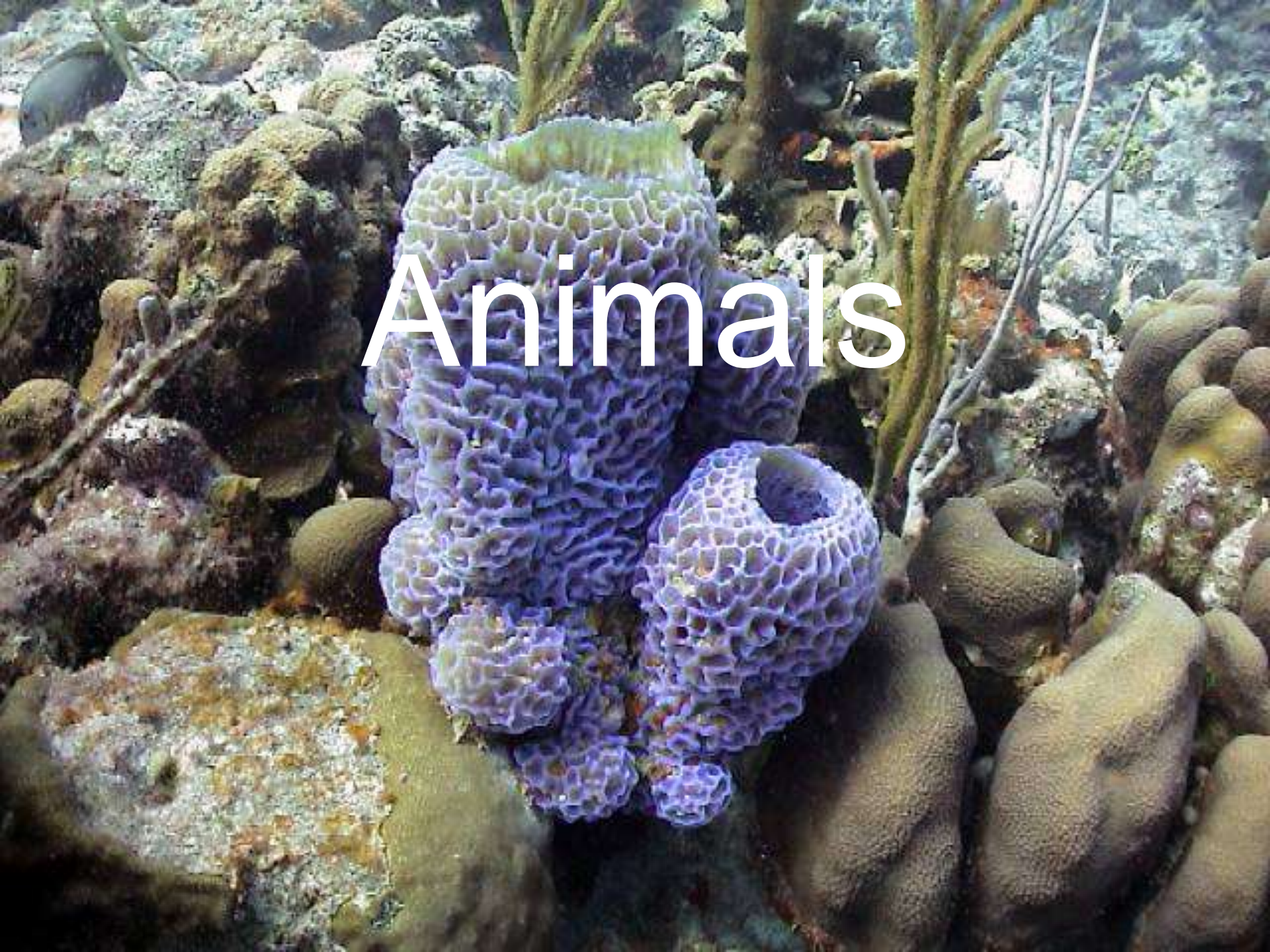
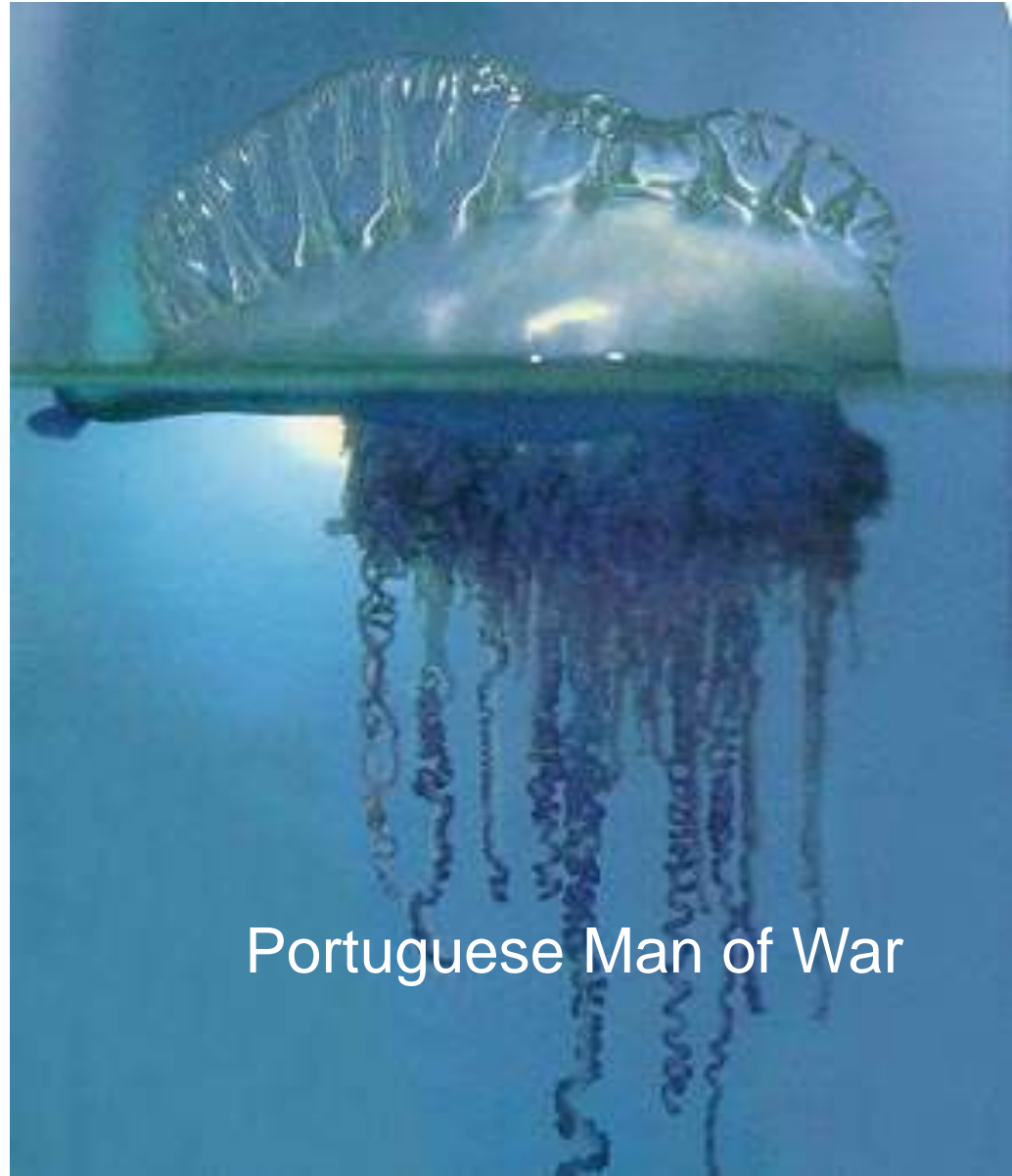


# Animals



# Characteristics of Animals

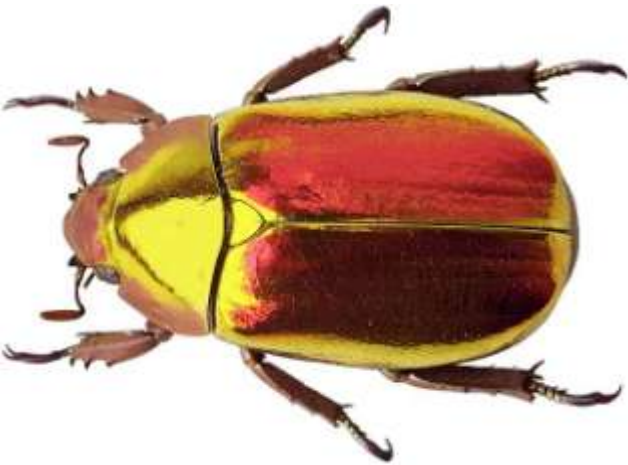
- Heterotrophic-  
depend on others for  
food
- Digest their food
- Move
- Multicellular
- Eukaryotic



Portuguese Man of War

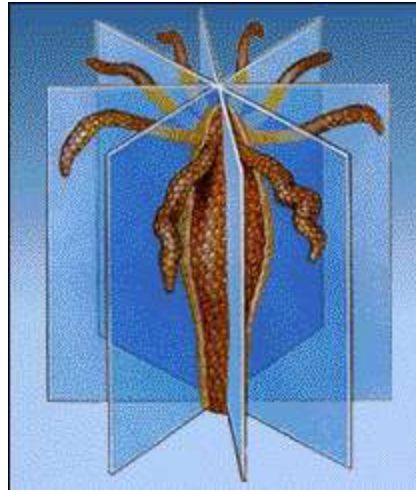
# Animal Classification

- Vertebrate
- Invertebrate

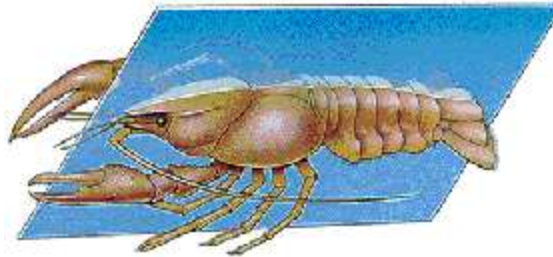


# Symmetry

- Radial
- Bilateral
- Asymmetry



**Radial Symmetry**



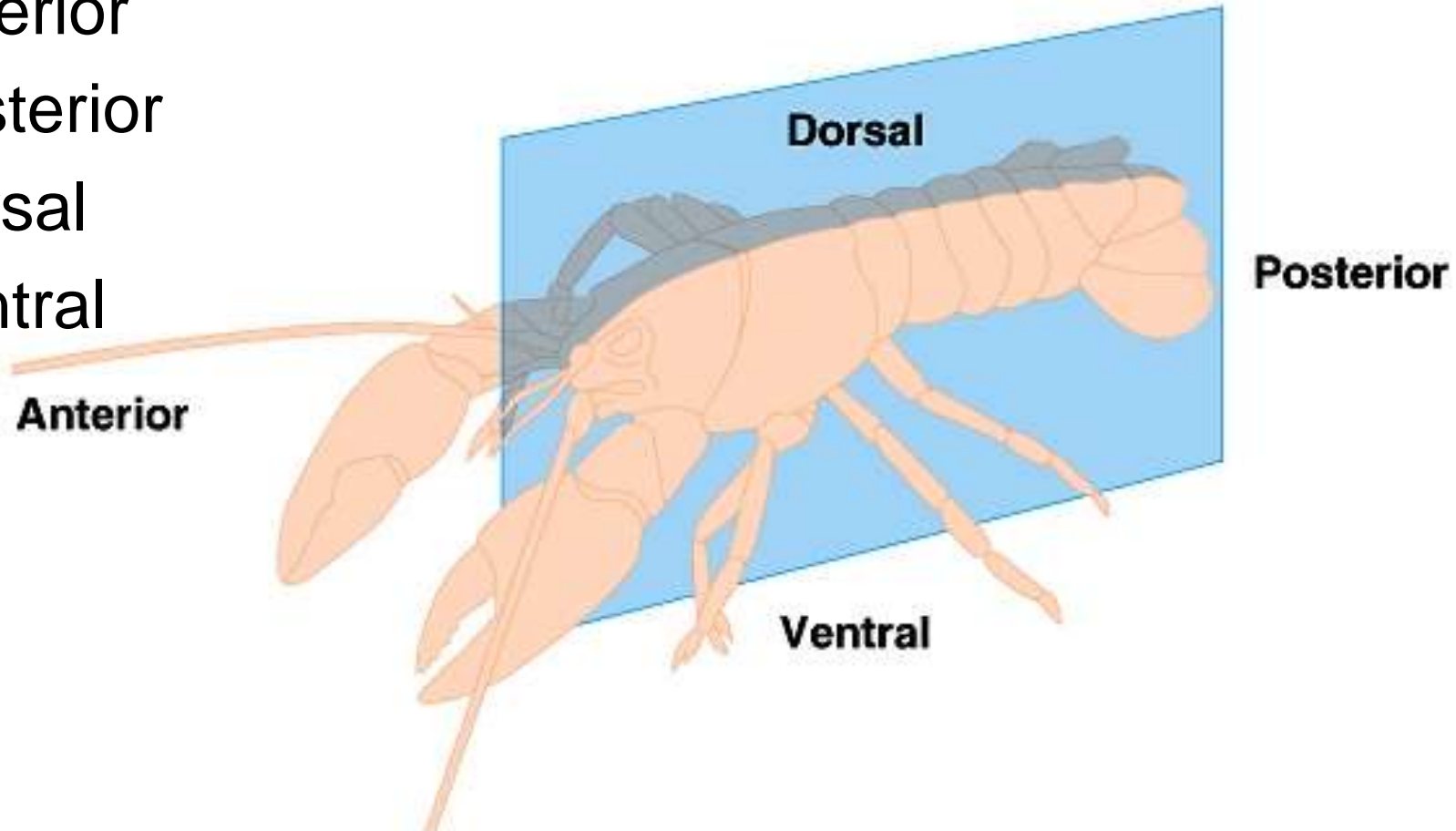
**Bilateral Symmetry**



**Asymmetry**

# Areas on bilaterally symmetrical organisms

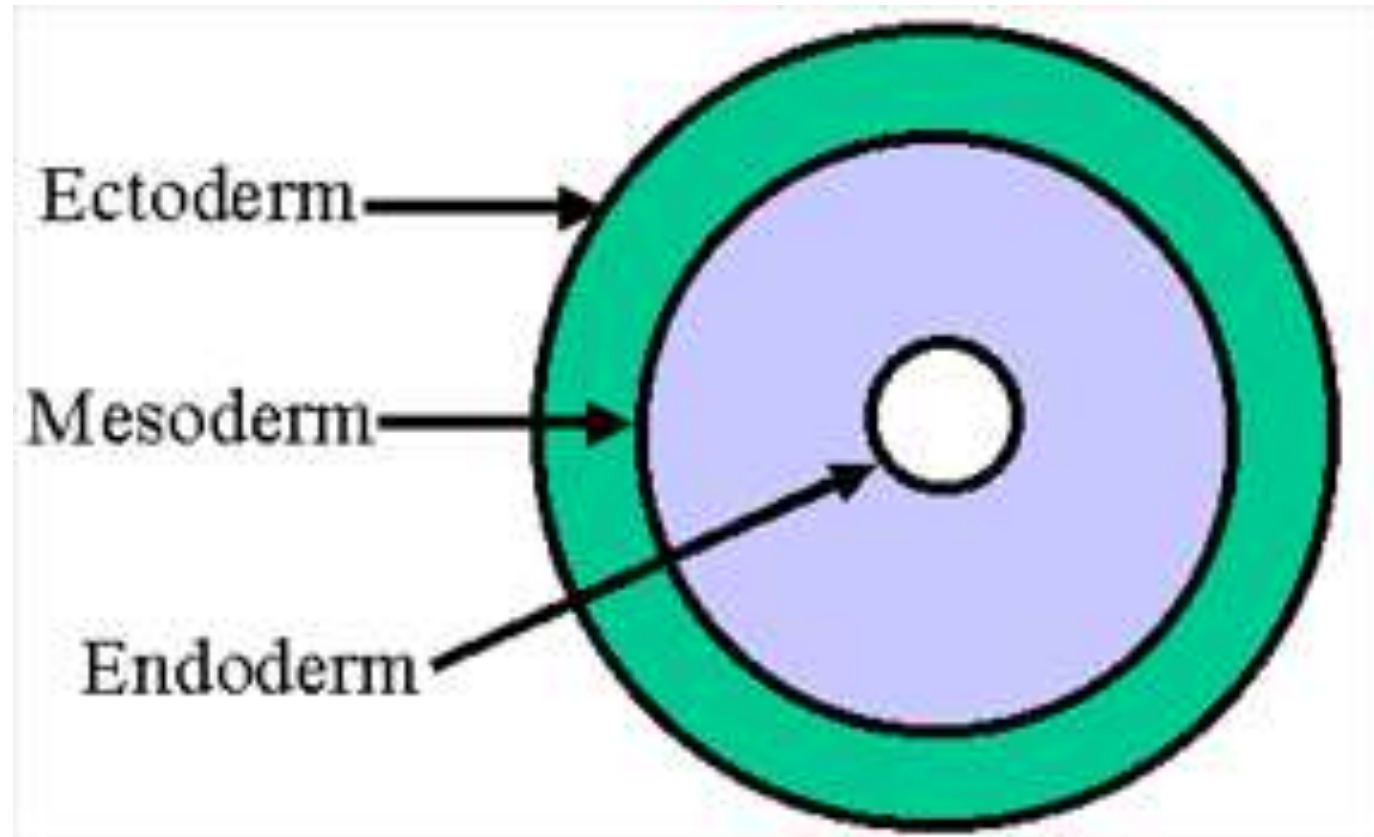
- Anterior
- Posterior
- Dorsal
- Ventral



**(b) Bilateral symmetry**

# Embryo layers of development

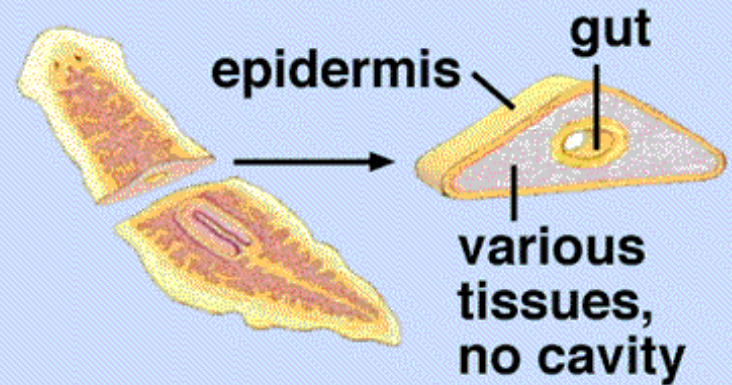
- Ectoderm
- Endoderm
- mesoderm



# Body Cavities

- Acoelomem
- Pseudocoelomem
- Coelomem

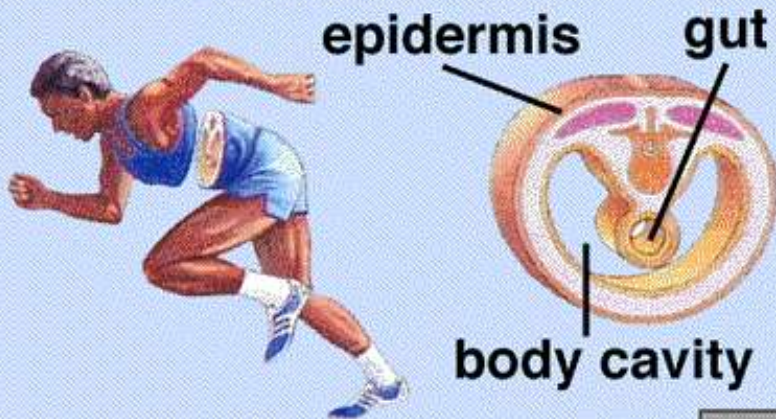
## Body Cavity Types: Acoelomate



1 of 3

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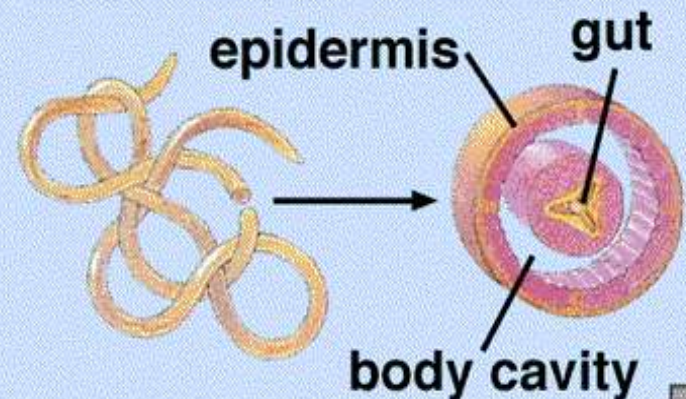
## Body Cavity Types: Coelomate



3 of 3

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## Body Cavity Types: Pseudocoelomate



2 of 3

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# Sponges & Cnidarians

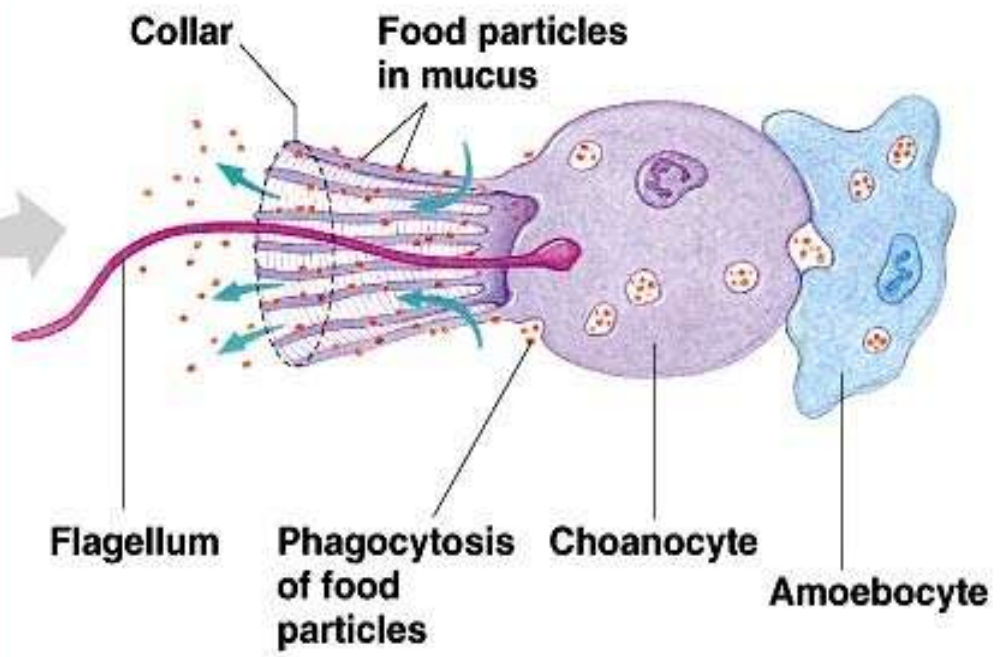
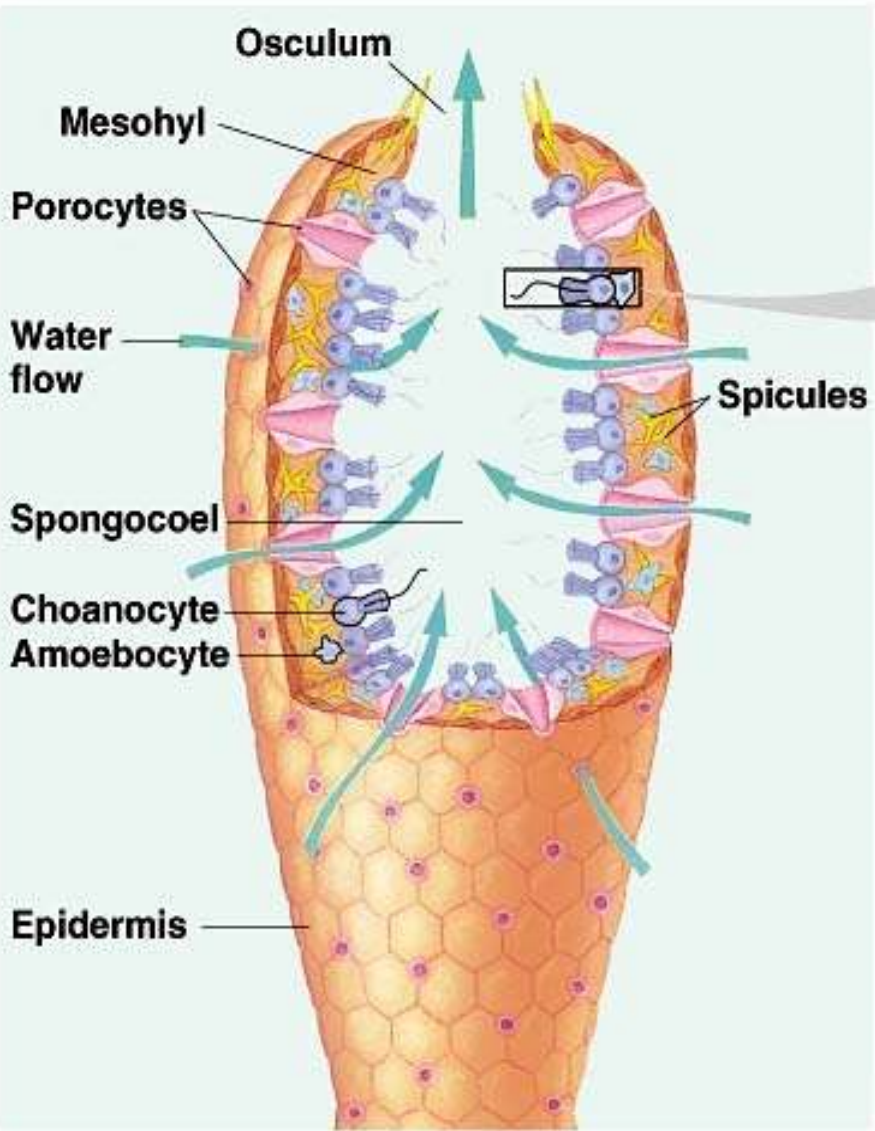




# Sponges

- In the phylum Porifera
- Characteristics
  - Aquatic
  - Most are asymmetrical
  - Adult form is sessile (doesn't move)
  - Have no tissues, organs, or organ systems or nervous system
  - Basic sponge body plan
  - Obtaining food
  - Feeds on plankton by filter feeding
  - Uses flagella to move water
  - Collars on collar cells trap plankton



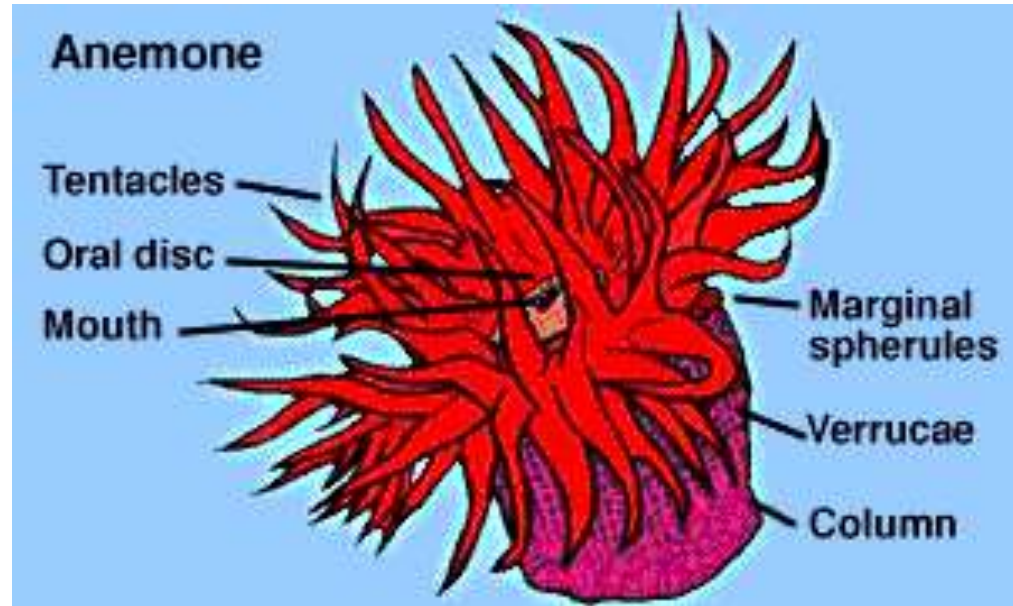




# Cnidarians

# Characteristics

- All have stinging cells
- Radial symmetry
- Have two cell layers (tissues)
- Have a body cavity
- Have tentacles
- Aquatic

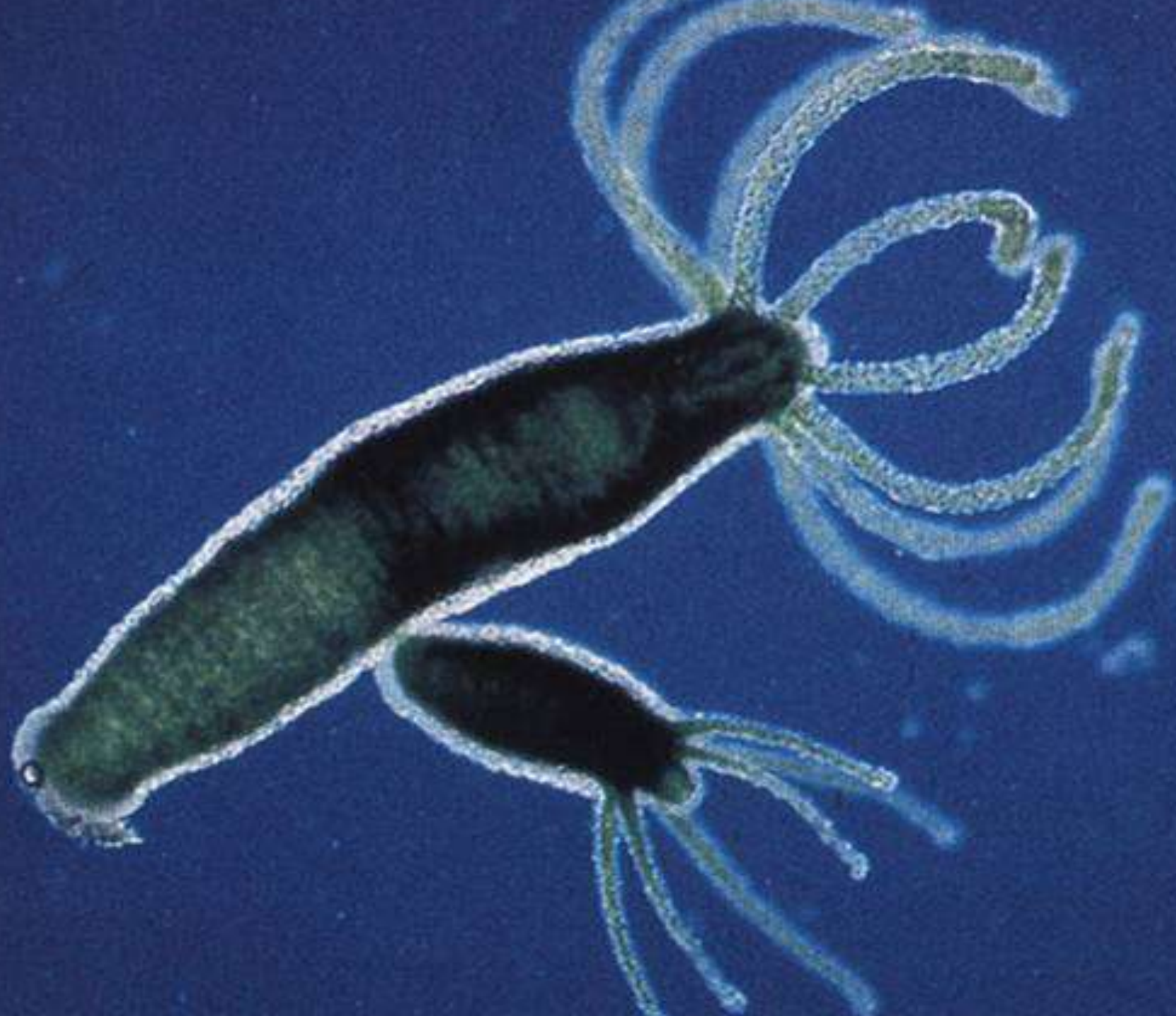


# Reproduction

- Asexual
  - Budding, fragmentation and regeneration
- Sexual
  - Hermaphrodites
    - Have both male and female parts
  - Fertilization takes place in water
  - Larvae swims to area to start new sponge

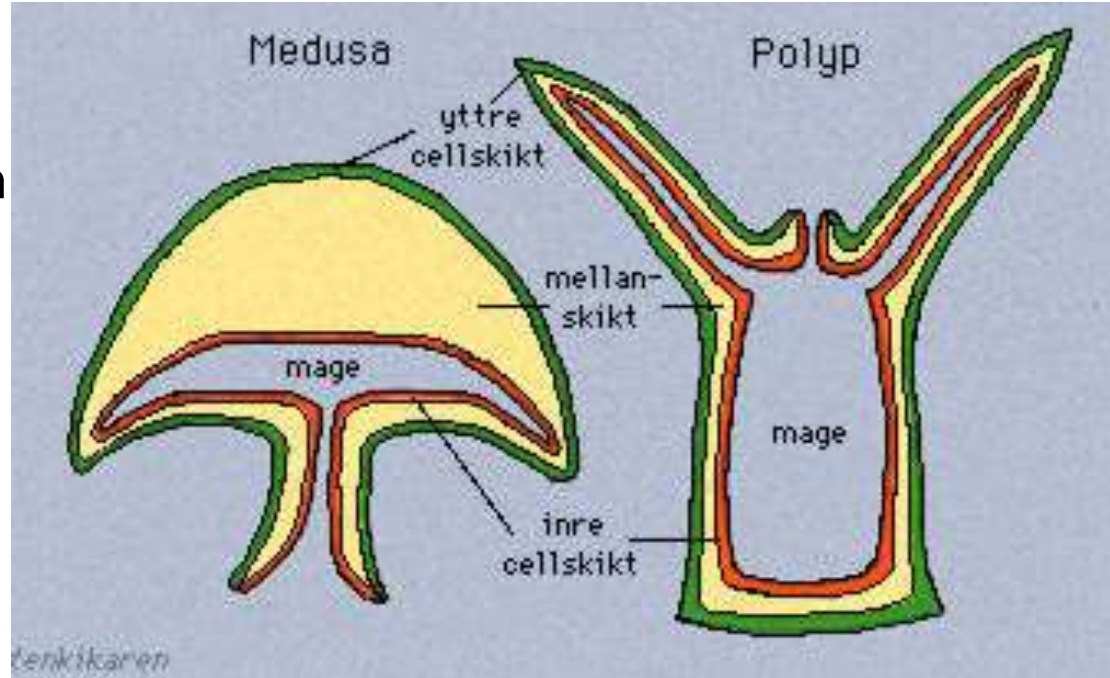


Hydra Budding



# Two body plans

- Polyp is the sessile stage (doesn't move)
- Medusa (Free living)
  - Many cnidarians have both stages
- Reproduction
  - Asexual – Polyps reproduce asexually by budding
  - Medusa can produce sexually and asexually
  - Sexually
    - Egg and sperm
    - Larvae stage
    - Polyp stage
    - Medusa









# Quiz

ch 13

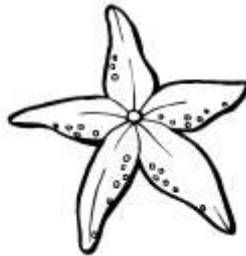
Name \_\_\_\_\_

**Instructions: Answer the following questions as completely as possible in the space provided.**

1. Name five characteristics of animals.

- a)
- b)
- c)
- d)
- e)

2. What is the symmetry of each of the following organisms?



a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_

3. Explain the difference between sessile and free-living.

4. Explain the difference between the polyp and medusa stages of the Cnidarians.

5. What is a hermaphrodite?

# Flat worms and Round worms



Tapeworm



Flatworms are in the phylum  
Platyhelminthes

# characteristics

- bilateral symmetry
- soft flattened body
- 3 tissue layers
- definite organs
- nervous tissue
- many are parasites  
but some are  
freeliving

# Planarians

- Free living
- Hermaphrodites
- Can reproduce asexually by dividing and regeneration

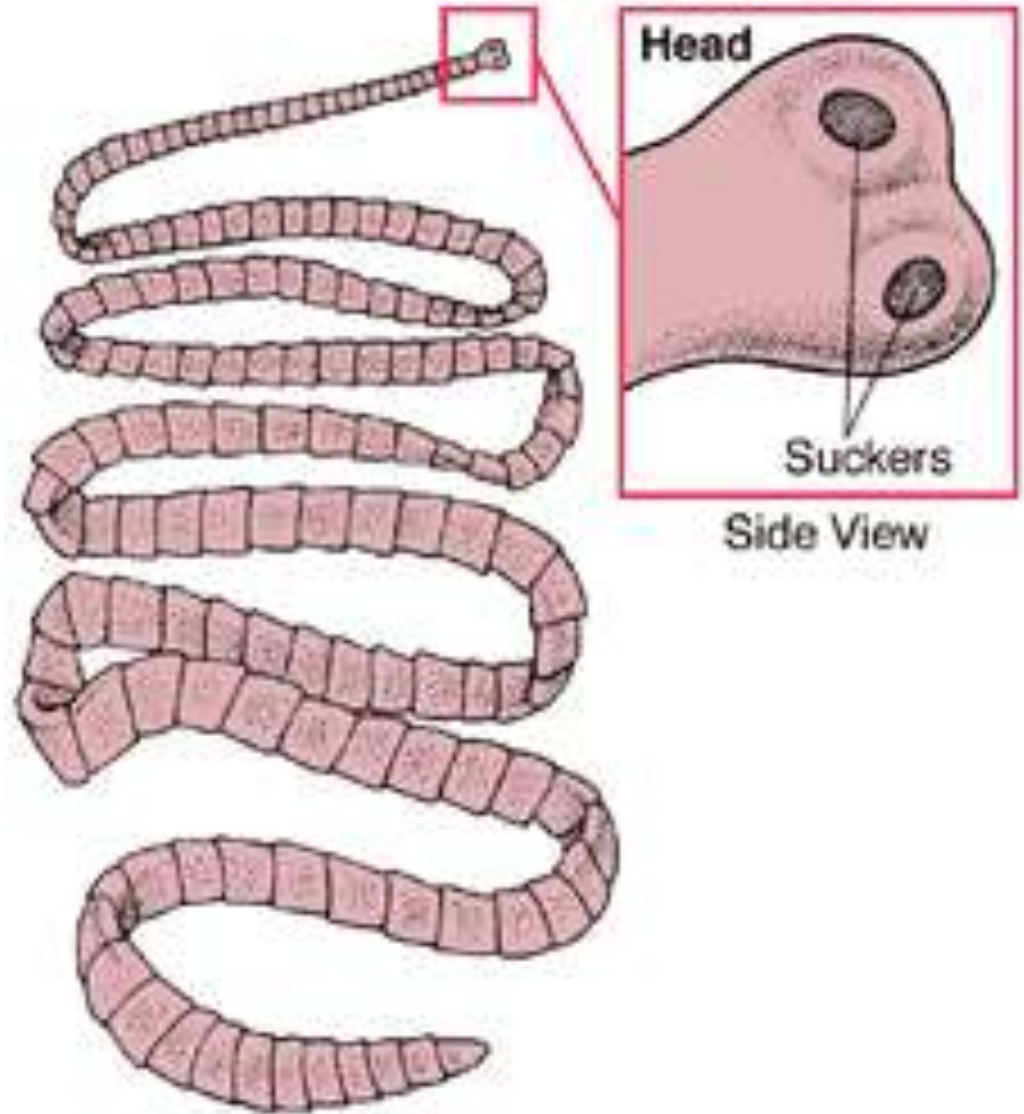
[www.planarians.org](http://www.planarians.org)

*Dugesia dorotocephala*



# Tape Worms

- Parasitic
- Hermaphrodites



# Round worms

## Phylum nematoda

- **Characteristic**
  - Complete digestive system
  - 3 tissue layers
  - organs present





# Types of Roundworms

- Ascaris – round and pin worms common human parasites
- Trichinella
- [Hook worms](#)
- Heart worms
- [Filarial worms](#)
- Many in Large intestine
- 64% of worlds population
- 30% of children in US
- 16% of the adults in the US

